

REMARKS

Claims 1, 3, and 5-15 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kovach et al (U.S. Pat. No. 6369530) in view of Herndon et al (U.S. Pat. No. 5214359). This rejection is respectfully traversed.

At the outset, Applicant notes that claim 1 has been amended to include the limitation that "said four high current, non-mechanical electronic switches include MOSFET switches each controlled by low current control signals from said control unit." Contrary to this, Applicant submits that Kovach's high side H-bridge consists of one pair of bipolar transistors instead of the claimed MOSFET switches. The MOSFET switch banks of the present invention provide higher current density and is a good solution for cost and packaging constraints in a winch application. In addition, MOSFET switches have the following advantages over bipolar transistors: MOSFET switches provide better current sharing, require less power to drive the MOSFET switch, have a larger and safer operating range and faster switching time. Accordingly, Applicant submits that the combination of Kovach et al and Herndon et al fail to disclose all of the limitations of claim 1. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to independent claim 3, Applicant notes that this claim includes the limitation of "a controller for determining a fault condition based upon feedback signals

from said control circuit; and a fault indicator responsive to said controller once the controller determines a fault condition, wherein said feedback signals are indicative of a thermal protection device condition.” Applicant acknowledges that Herndon includes circuitry for sensing overheating of the motor and providing automatic shutdown. However, there is no disclosure in Herndon et al ‘359 for providing a fault indicator responsive to a controller which determines a fault condition based upon feedback signals which are indicative of a thermo protection device condition, as claimed. Instead, the disclosure of Herndon et al merely shuts down the motor when a over temperature condition is obtained. There is no disclosure in Herndon et al for any type of fault indicator, as claimed. Therefore, reconsideration and withdrawal of the rejection of the claim 3 as amended are respectfully requested.

With regard to independent claim 5, it is noted that this claim includes the limitation of “a controller for determining a fault condition based upon feedback signals from said control circuit; and a fault indicator responsive to said controller once the controller determines a fault condition, wherein said feedback signals are indicative of a battery voltage.” Applicant submits that the disclosure of Herndon et al fails to teach or suggest a fault indicator responsive to a controller which determines a fault condition based upon feedback signals indicative of a battery voltage, as claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to independent claim 6, Applicants note that this claim includes the limitation of “a controller for determining a fault condition based upon feedback signals from said control circuit; and a fault indicator responsive to said controller once the controller determines a fault condition, wherein said feedback signals are indicative of a

motor armature voltage.” Applicant submits that the disclosure of Herndon fails to disclose a fault indicator responsive to a controller which determines a fault condition based upon feedback signals indicative of a motor armature voltage, as claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to independent claim 7, Applicant notes that this claim includes the limitation of “a controller for determining a fault condition based upon feedback signals from said control circuit; and a fault indicator responsive to said controller when said controller determines a fault condition, wherein said feedback signals are indicative of a circuit module temperature.” Applicant submits that Herndon fails to teach or suggest a fault indicator responsive to a controller which determines a fault condition based upon feedback signals indicative of a circuit module temperature, as claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to independent claim 8, Applicant notes that this claim includes the limitation of “a controller for determining a fault condition based upon feedback signals from said control circuit; and a fault indicator responsive to said controller when said controller determines a fault condition, wherein said feedback signals are indicative of a motor field voltage.” Applicant submits that Herndon fails to teach or suggest a fault indicator responsive to a controller which determines a fault condition based upon feedback signals indicative of a motor field voltage, as claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With respect to independent claim 9, Applicant notes that this claim has been amended to include the limitation “a controller for determining a fault condition based upon feedback signals from said control circuit; and a fault indicator responsive to said

controller once a controller determines a fault condition, wherein said fault indicator provides a plurality of different indicator codes indicative of different fault conditions.” Applicant submits that Herndon fails to disclose a fault indicator which provides a plurality of different indicator codes indicative of different fault conditions, as claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With respect to independent claim 10, Applicant notes that this claim includes the limitation of “a control circuit including a plurality of switches for controlling a direction of current supply to a field coil of said motor; a controller for determining an overload condition based upon a voltage across one of said plurality of switches.” Applicant submits that the disclosure of Herndon in combination with Kovach fails to disclose a controller for determining an overload condition based upon a voltage across one of a plurality of switches of a control circuit which control a direction of current supply to a field coil of a motor, as claimed. In particular, the disclosure of Herndon et al provides a current limiting device, but does not determine an overload condition based upon a voltage across one of a plurality of switches of the control circuit, but instead, disables the motor when the current exceeds a predetermined value. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to independent claim 13, Applicant submits that neither Kovach nor Herndon disclose a method of programming a controller capable of use for multiple types of winches, comprising the steps of activating a program mode of a controller; and providing a programming voltage to said controller indicative of a type of winch the controller is installed in, as claimed. Therefore, reconsideration and withdrawal of the rejection of this claim are respectfully requested.

With regard to independent claim 14, Applicant again submits that neither Kovach nor Herndon disclose a method of programming an over-load function for a winch controller according to the method steps, as claimed. Applicant submits that neither reference discloses any of the method steps claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to independent claim 15, Applicant again submits that neither of the cited references disclose or suggest a method of programming an over-load interrupt function for a winch controller including the steps, as claimed. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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